



JEFFERSON LAB EH&S COMMITTEE MEETING

June 4, 2004

9:00 AM - 10:00 AM, CEBAF Center Room 110

ATTENDEES:

JEFFERSON LAB EH&S Committee Members:

| | |
|-------------------------|---------------|
| James Murphy (Chairman) | Robert May |
| Carter Ficklen | Dennis Skopik |
| John Kelly | |

JEFFERSON LAB EH&S Committee Advisors:

Bruce Ullman

Other Representatives:

Note: Other representatives, including those listed below, are welcome to attend the meetings.

| | |
|-----------------|-----------------|
| Smitty Chandler | Hugh Williams |
| Patty Hunt | Mark Waite |
| Bert Manzlak | Wade Carrolle |
| Barbara Morgan | Steve Singleton |
| Ed Martin | Todd Hutner |
| John Musson | |

1. Agenda was accepted as written.
2. Dr. Chandler reviewed the AED Proposal to be submitted to Director's Council. The proposal is attached.
3. Murphy distributed "TRC & DART Figures by Division - FY01 to Present". Contractors, of all categories, are included with the division that is directly responsible for supervising the work provided. The FY07 Office of Science goal for TRC is .65 and for DART .25.

John Kelly asked that the Current EH&S Status block on the "Insider Page" include previous year's TRC and DART results to show our progress (or lack thereof).
4. Patty Hunt introduced Todd Hutner from Florida State University, who will be with us this summer to look at soldering workstations. He will work with others to evaluate the effectiveness of lead-free solder, test various cleaning methods, investigate the use of inexpensive antistatic mat covers, etc.
5. Ed Martin, past chair of the Electrical Safety Subcommittee, introduced John Musson who took over the chair effective June 1. Ed reported briefly on the recent Electrical Safety Workshop he attended and recommended that JLab send representatives to these meetings. The group addresses electrical safety topics with particular relevance to accelerators. Lloyd Gordon from Los Alamos is leading this effort.

Minutes of Meeting
Jefferson Lab EH&S Committee Meeting
June 4, 2004
Page 2

6. OA received positive comments on the information presented by the SWIS Safety Screens. Linda Ware, Public Relations Department, has undertaken the job upgrading the effectiveness of the presentation. Information should again be available in the near future.
7. Bob May summarized Dr. Jeff Oakley's recent "Review of Accelerator Division Accident/Incident Investigative Process". Dr. Oakley made several noteworthy observations and submitted recommendations for improvements. Bob May hopes to present the findings to Director's Council and enlist their support for lab wide implementation of the recommendations. (See attachment)
8. .

AED Proposal
June, 2004

To: JEHSC Committee Members

At the JEHSC meeting last week you asked me to suggest a hierarchy of priorities to assist the Director's Council in its decision making about AED's. Hugh and I have developed the following possible schema.

AED Protection Level 0: No AED's on site.

AED Protection Level 1: One AED located in Medical Services.

AED Protection Level 2: Four AED's. This is the current state. They are located in FEL, MCC, VARC hallway outside Medical Services, and another inside Medical Services.

AED Protection Level 3: To Level 2, add AED's in areas that might feature increased probability of electrical accidents. These are the Test Lab, EEL, Counting House (as a surrogate for the End Stations), ARC, CHL, and buildings 89, 87 and 59. To achieve this level of protection the Lab would need to obtain 8 more AED's, which would bring the total number to 12.

AED Protection Level 4: An enhanced version of Level 3. In areas with increased probability of electrical accidents additional AED's would be placed so as to make all staff in those areas 90 seconds or less away from an AED. Second AED's would be added to the Test Lab, EEL, and ARC. To reach this level of protection the Lab would need to purchase 3 more AED'S above Level 3. This would bring the total number on site to 15.

AED Protection Level 5: To Level 4 coverage, add AED's to areas not thus far protected. This would involve adding one AED to each of the following: CEBAF Center, Trailer City, the Residence Facility, Security, and buildings 98, 52, 38, and 19. This level of protection would require procurement of 8 more AED's beyond Level 4. Staff in all areas would then be within 90 seconds of an AED. The total number of AED's on site would then be 23.

Medical Perspective: I estimate that approximately 20-30% of deaths in the community involve Re: AED's circumstances for which AED's could be appropriately used. But for deaths that occur in the workplace the percentage is very close to 100. AED's work well, but only if they are used promptly. If they are used within 4 minutes of cardiac arrest survival is approximately 30% (assuming that CPR was given while waiting for the AED). After 7 minutes survival is 20%. By 10 minutes, survival is 5%. This is why Hugh's earlier report recommended that sufficient AED's be obtained so as to allow every staff member to be within 90 seconds, one way, of an AED. Community Perspective: Most of the corporate clients that I serve have AED's. None of them, except hospitals, meet the 90 second protection level.

Thank you very much for considering our hierarchy. Please let me know if I can be of further assistance to you.

-Smitty

DART and TRC by Division for FY01 to Present

| | FY01 SURA | Contractors | FY02 SURA | Contractors | FY03 SURA | Contractors | FY04 SURA | Contractors |
|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|
| Acc | 606010 | 51796 | 637903 | 69666 | 633113 | 29579 | 313063 | 15536 |
| Admin | 149006 | 158589 | 149332 | 126719 | 126370 | 121861 | 64179 | 63664 |
| Physics | 287073 | 8883 | 309581 | 9025 | 299136 | 18490 | 154599 | 1134 |
| Directorate | 52068 | 1910 | 44980 | 0 | 108503 | 556 | 57122 | 24 |
| | 1094157 | 221178 | 1141796 | 205410 | 1167122 | 170486 | 588963 | 80358 |
| | | 1,315,335 | | 1,347,206 | | 1,337,608 | | 669,321 |

| | FY01 DART Cases | TRC Cases | FY02 DART Cases | TRC Cases | FY03 DART Cases | TRC Cases | FY04 (thru 3/31) DART Cases | TRC Cases |
|-------------|-----------------------|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------------------|-----------|
| Accelerator | 7 | 11 | 8 | 14 | 5 | 6 | 1 | 5 |
| Admin | 2 | 6 | 0 | 3 | 0 | 3 | 3 | 3 |
| Physics | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Directorate | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| Lab | 9 | 17 | 8 | 17 | 6 | 11 | 4 | 9 |

| | FY01 DART | TRC | FY02 DART | TRC | FY03 DART | TRC | FY04 (thru 3/31) DART | TRC |
|-------------|--------------|-----|--------------|-----|--------------|-----|--------------------------|-----|
| Accelerator | 2.1 | 3.3 | 2.3 | 4.0 | 1.5 | 1.8 | 0.6 | 3.0 |
| Admin | 1.3 | 3.9 | 0.0 | 2.2 | 0.0 | 2.4 | 4.7 | 4.7 |
| Physics | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 1.3 |
| Directorate | 0.0 | 0.0 | 0.0 | 0.0 | 1.8 | 1.8 | 0.0 | 0.0 |
| Lab | 1.4 | 2.6 | 1.2 | 2.5 | 0.9 | 1.6 | 1.2 | 2.7 |

Review of Accelerator Division Accident/Incident Investigative Process

A summary of observations and
recommendation by Jeff Oakley, Ph.D.,
University of Houston – Clear Lake



Goal of Review

Develop a clear and repeatable process to ensure consistency and quality of the investigations and accident reports

- ❖ Develop recommendations for improvements
- ❖ Strengthen ISM guiding principles and core functions
- ❖ Conduct a Train-the-Trainer course



Focus of Review

Evaluate Jefferson Lab Accident/Incident Investigative Process using an ISM (Integrated Safety Management) Approach

- ❖ Interviewed fourteen personnel
- ❖ Reviewed documents and reports
- ❖ Compared to other high performing programs/processes



Phases of Review

- ❖ Phase I (March 15-16, 2004)
 - Interviewed 14 Personnel
 - Document Review
- ❖ Phase II (March 17 – May 9, 2004)
 - Analyzed and Prepared Deliverables
- ❖ Phase III (May 10-12, 2004)
 - Management Presentation
 - Train-the-Trainer Course
 - Roundtable Forum



Review Findings

- ❖ Everyone extremely helpful – valued accident investigations.
- ❖ ES&H Department viewed very positive.
- ❖ Participants generally very weak on ISM.
- ❖ Excellent dedication to accident investigation.
- ❖ Accident investigation process was well known and understood by supervisors.
- ❖ Impressive database tool for tracking accidents
- ❖ Negative perception of accident investigations – concern about the outcome.
- ❖ Human resources member on investigation team unusual.



Review Findings, cont'd.

- ❖ Supervisors lacked accident investigation training
- ❖ Supervisors lacked causal analysis training
- ❖ Too many people on accident investigation team
- ❖ Short time frame for investigation completion
- ❖ No causal analysis performed
- ❖ Reports were too long
- ❖ Very little confidence among those interviewed that the current process will help prevent accidents.



Recommendations for Improvement



- ❖ Initiate a more proactive approach to investigations, near misses, and problems.
 - **Use investigative approach – focus on fact finding not fault finding.**
 - **Avoid punishment unless willful violation of laws or Lab required policy/procedures.**
- ❖ Incorporate accident investigation training - including familiarization with causal analysis - into supervisor training.
- ❖ Limit number of people on accident investigation team
 - **A few trained is better than many untrained.**
 - **Only accident investigators on team.**
 - **HR not involved in investigation.**



Recommendations for Improvement, cont'd.



- ❖ Develop an accident review board (ARB).
 - ARB addresses concerns about conflict of interest.
 - ARB responsible for quality and consistency.
 - HR and DSO participation on ARB
- ❖ Insist on Accuracy over Speed
 - Use proper investigation technique
 - Employ causal analysis techniques when analyzing the accident
- ❖ Ensure proper follow-up activities
 - This will develop confidence that corrective actions are found, fixed, and follow-up is performed
 - JLab should spend as much effort and enthusiasm into follow up as on investigation



Final Thoughts



❖ FIND – FIX – FOLLOW UP

